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Krauss et al.

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(54) **BEARINGLESS ROTOR BLADE ASSEMBLY
FOR A HIGH SPEED ROTARY-WING
AIRCRAFT**

4,616,977 A 10/1986 Schramm

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(58) **Field of Classification Search** 416/134 A,
416/148, 226

See application file for complete search history.

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(57) **ABSTRACT**

A bearingless rotor system includes a flexbeam assembly having a first beam and a second beam arranged in a back-to-back orientation with a pitch shaft channeled therebetween. The beams morph into a rotor blade spar at an outboard rotor blade station. The outboard section of the flexbeam assembly receives the full pitch input from the pitch shaft while the most inboard section of the flexbeam assembly is essentially fixed in pitch by a blade attachment to a rotor hub assembly. The flexbeam assembly twist versus span is essentially linear from the most inboard to the most outboard rotor blade stations. The outboard rotor blade station, being attached to the outboard section of the flexbeam assembly, thereby also defines the pitch input equivalent from the outboard rotor blade station to the rotor blade tip.

18 Claims, 16 Drawing Sheets

